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PATENT ABSTRACTS OF JAPAN

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(30)Priority

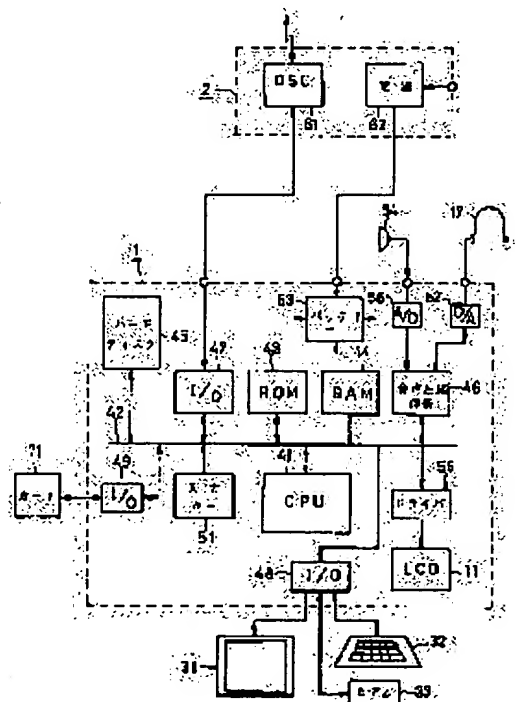
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(54) SPEECH REPRODUCING DEVICE AND ITS METHOD, SPEECH RECORDING DEVICE AND ITS METHOD, SPEECH RECORDING AND REPRODUCING SYSTEM, SPEECH DATA TRANSFER METHOD, INFORMATION RECEIVING DEVICE, AND REPRODUCING DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a speech recording/reproducing device and a system therefor suitable for a headphone stereo which is easy-to-use, can reproduce high sound quality, has possibilities for development, and is capable of quickly meet users' preferences or the latest trends in music.

SOLUTION: A headphone stereo body 1 is provided with a control part for an entire operation, a card type hard disk 45 to write/read speech data, etc., a speech data compression/expansion circuit 46, and an external I/O port, which connects the headphone stereo body 1 to a music data network service center via DSU 61 to store music data therefrom on the hard disk 45. Digital recording of speech data improves sound quality, and the use of the card type hard disk permits the device to be of a high access speed and also makes it compact and light, making it possible to select a favorite music from the network service center, making it easy-to-use, enormously increasing the number of music to utilize, and making it possible to meet diversification of users' preferences and the latest trends in music.



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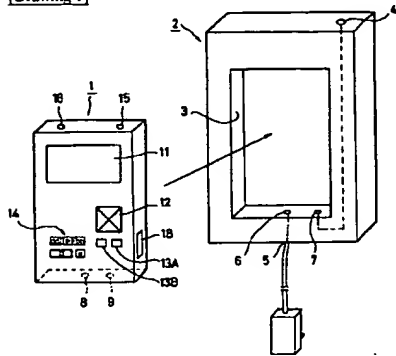
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DRAWINGS

[Drawing 1]

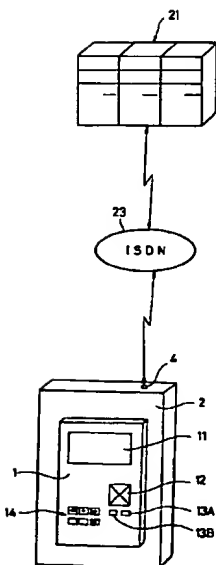


[Drawing 2]

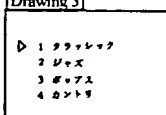
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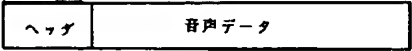


[Drawing 3]

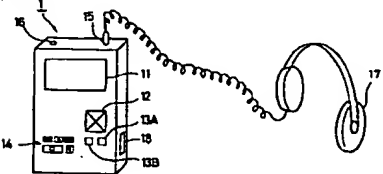




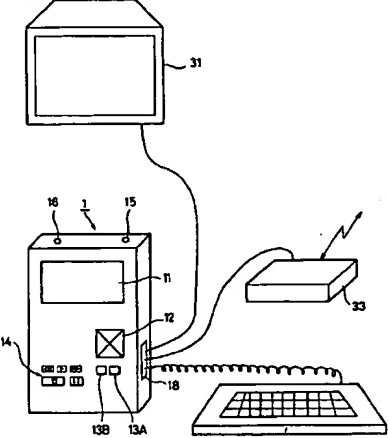
[Drawing 4]



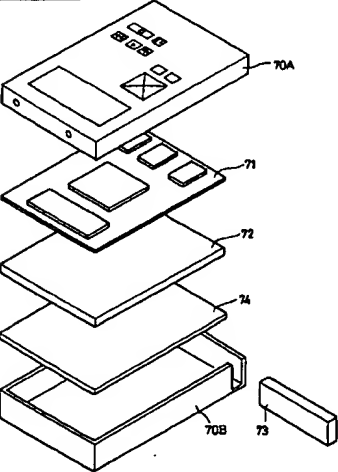
[Drawing 5]



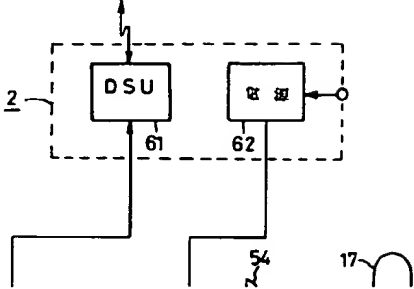
[Drawing 6]

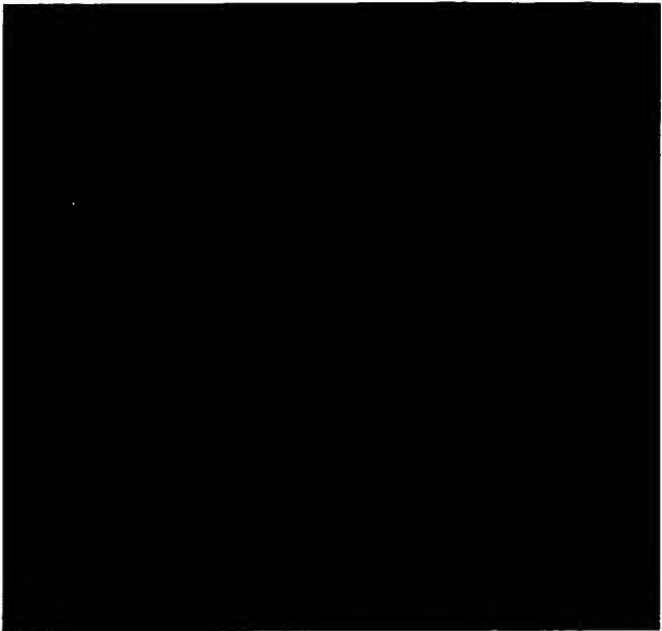


[Drawing 8]



[Drawing 7]





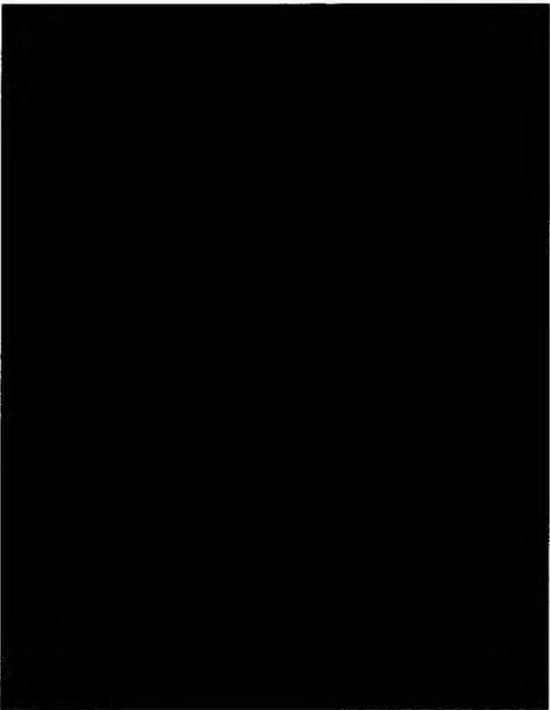
[Drawing 9]



74



74



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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the perspective diagram used for explanation of an example of the digital carrying type headphone stereo cassette tape recorder with which this invention was applied.

[Drawing 2] It is the perspective diagram used for explanation of transfer SHITESUMU of the voice data to which this invention was applied.

[Drawing 3] It is the abbreviation diagram used for explanation of transfer SHITESUMU of the voice data to which this invention was applied.

[Drawing 4] It is the abbreviation diagram used for explanation of transfer SHITESUMU of the voice data to which this invention was applied.

[Drawing 5] It is the perspective diagram used for explanation of an example of the digital carrying type headphone stereo cassette tape recorder with which this invention was applied.

[Drawing 6] It is the perspective diagram used for explanation of an example of the digital carrying type headphone stereo cassette tape recorder with which this invention was applied.

[Drawing 7] It is the block diagram showing the composition of an example of the digital carrying type headphone stereo cassette tape recorder with which this invention was applied.

[Drawing 8] It is the perspective diagram showing the composition of an example of the digital carrying type headphone stereo cassette tape recorder with which this invention was applied.

[Drawing 9] It is the abbreviation diagram used for explanation of the expansion card kicked to the digital carrying type headphone stereo cassette tape recorder with which this invention was applied.

[Description of Notations]

1 ... A digital carrying type headphone stereo cassette tape recorder, 2 ... Base station

21 ... A network service center, 23 ... ISDN circuit

71 ... A main substrate, 72 ... Card type hard disk

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] Especially this invention relates to the thing use [thing] for a headphone stereo cassette tape recorder, and it was made to store audio data in a carried type headphone stereo cassette tape recorder by communication especially about a suitable voice regenerative apparatus and a suitable method, voice recording equipment and a method, a voice recording regeneration system, the transfer method of voice data, an information receiving set, and a record medium.

[0002]

[Description of the Prior Art] The thing which can enjoy music reproduction under a walk and by in the car using the magnetic tape of analog recording, such as a compact cassette, as a carried type headphone stereo cassette tape recorder has spread widely. When using the carried type headphone stereo cassette tape recorder using the magnetic tape of analog recording, usually, out of the music sources, such as FM broadcasting and CD (compact disk), a user chooses his favorite music, records on a compact cassette, equips a carried type headphone stereo cassette tape recorder with this, are under a walk and in the car, and are enjoying audio reproduction.

[0003] However, the thing using the magnetic tape of analog recording, such as a compact cassette, has a limitation in improvement in tone quality, and degradation of the signal by dubbing produces it. Moreover, in order to record one's favorite music from the music sources, such as CD, long working hours are needed. Furthermore, in a magnetic tape like a compact cassette, it is late, and its favorite music can be searched in an instant, and it can reproduce, or access speed cannot carry out repeat reproduction.

[0004] Moreover, there is a thing using CD as a carried type headphone stereo cassette tape recorder. Since CD is a record medium only for reproduction, when using the carried type headphone stereo cassette tape recorder using CD, a user purchases favorite his own CD, equips carried type CD headphone stereo cassette tape recorder with this, are under a walk and in the car, and are enjoying audio reproduction. In the case of CD, it is digital recording and tone quality is very excellent. Moreover, access speed is also high-speed and desired music can be reproduced in an instant. However, since CD headphone stereo cassette tape recorder is only for reproduction, it cannot create the music source into which its favorite music was edited. Moreover, in the case of CD headphone stereo cassette tape recorder, it may be weak to vibration and a sound jump may arise in the vibration from the outside.

[0005] In addition, as a carried type headphone stereo cassette tape recorder, what uses the magnetic tape of digital recording, such as DAT (digital audio tape) and NT (trademark : non tracking tape), is known as a record medium. Degradation of the signal by dubbing etc. cannot produce the thing using the magnetic tape of digital recording, such as DAT and NT, easily. In the case of DAT, audio reproduction of the quality of loud sound is very possible. In NT, record of the super-time in a micro cassette can be performed. However, the thing using the magnetic tape has the problem that access speed is slow and repeat reproduction and search reproduction take time.

[0006] Furthermore, there is a thing using MD (trademark : mini disc) as such a carried type headphone stereo cassette tape recorder. It is the record medium in which record/reproduction is possible, and MD chooses the music of its liking [a user], records it on MD, equips carried type CD headphone stereo cassette tape recorder with this, it is under a walk and in the car, and can enjoy audio reproduction. [the music sources, such as CD, to] In the case of MD, it is digital recording and tone quality is very excellent. Moreover, access speed is also high-speed and desired music can be reproduced in an instant. Furthermore, the influence of vibration from the outside does not receive by having shocking proof memory, but it is

[0007]

[Problem(s) to be Solved by the Invention] Thus, as a record medium used for a carried type headphone stereo cassette tape recorder, various things are proposed variously conventionally. However, that with which the record medium used for a conventional carrying type headphone stereo cassette tape recorder is satisfied of all demands in user-friendliness, tone quality, etc. is not found.

[0008] First, the thing using the compact cassette of analog recording has a problem about tone quality. The thing using the magnetic tape of DAT or digital recording like NT has a problem in respect of access speed. CD is only for reproduction and is weak to vibration. Although MD is possible in record/reproduction and a miniaturization can be attained, a limitation is in the number of titles of MD sold now, and desired music may be unable to go into a hand easily. Moreover, dubbing the music

sources, such as CD, takes time.

[0009] Furthermore, in MD, since exclusive architecture, i.e., the circuitry of exclusive use, was adopted in order to attain small and cheap-ization as a whole as the mounting method of these ICs using IC for ATRAC (Adaptive Transform Acoustic Coding) compression extension developed only for MD, it was not able to be used as another uses, such as record reproduction of record media other than MD.

[0010] Furthermore, music user liking is diversified and a musical fashion is also changing remarkably for a short period of time. It is difficult to hold fashion of such music exactly in the conventional music record medium.

[0011] Then, using semiconductor memory as a record medium of a carried type headphone stereo, an applicant for this patent is writing music information in this semiconductor memory, and has proposed JP,06-131371,A at any time as a carried type headphone stereo which enabled reproduction of music information. However, the internal configuration was that from which it consists of exclusive use IC and exclusive architecture, and neither versatility nor expandability is acquired like MD. Therefore, while high versatility and high expandability are acquired, the purpose of this invention has good user-friendliness, and it is to offer the voice regenerative apparatus which can reproduce high tone quality and a method, voice recording equipment and a method, a voice recording regeneration system, the transfer method of voice data, an information receiving set, and a record medium.

[0012] Other purposes of this invention have possibilities and are to offer the voice regenerative apparatus which can respond to liking of a user's music or a musical fashion promptly and a method, voice recording equipment and a method, a voice recording regeneration system, the transfer method of voice data, an information receiving set, and a record medium.

[0013]

[Means for Solving the Problem] The storage section in which this invention performs the control section which controls the whole operation, and the writing/read-out of data, The voice extension section which elongates the compressed voice data, and the external I/O section which exchanges the data from the outside, It has the standard bus for personal computers to which data are transmitted between a control section, the storage section, the voice extension section, and the external I/O section. It is the voice regenerative apparatus which transmits the compression voice data which memorized compression voice data in the storage section, and was memorized by the storage section to the voice extension section, elongates compression voice data in the voice extension section, and reproduced voice.

[0014] The storage section in which this invention performs the control section which controls the whole operation, and the writing/read-out of data, The voice extension section which elongates the compressed voice data, and the external I/O section which exchanges the data from the outside, It has the standard bus for personal computers to which data are transmitted between a control section, the storage section, the voice extension section, and the external I/O section. It is voice recording equipment which incorporates the data sent by the predetermined format through the external I/O section, takes out compression voice data from data, and memorized the incorporated compression voice data in the storage section.

[0015] This invention is the voice reproduction method which consists of the step which memorizes compression voice data in the storage section, a step which reads the compression voice data memorized by the storage section, and is transmitted to the voice extension section, and a step which reproduces voice data in the voice extension section.

[0016] This invention is the voice recording method which consists of the step which incorporates the data sent by the predetermined format through the external I/O section, a step which takes out compression voice data from the data incorporated through the external I/O section, and a step which memorizes compression voice data in the storage section.

[0017] The storage section in which this invention performs the control section which controls the whole operation, and the writing/read-out of data, The voice recorded message sender for telephone with which the voice extension section which elongates the compressed voice data, and the external I/O section which exchanges the data from the outside were united, It is the voice recording regeneration system which consists of the 1st functional right hand side with which it is equipped free attachment and detachment] to a voice recorded message sender for telephone, and which gives an auxiliary function to a voice recorded message sender for telephone, and the 2nd functional right hand side with which a voice recorded message sender for telephone is equipped free [attachment and detachment inside], and which adds a new function to a voice recorded message sender for telephone.

[0018] From the voice database with which two or more voice data was accumulated, this invention receives desired voice data through a communication line, and accumulates voice data by the receiving side, and in the transfer method of voice data which is reproduced, a voice database is the data transfer method which was made to charge to the receiving side while sending data to a receiving side by the predetermined move format.

[0019] This invention is an information receiving set which consists of a means to choose desired voice data from the voice database with which two or more voice data was accumulated, a means to receive desired voice data through a communication line, and to accumulate voice data, and a means to reproduce the accumulated voice data.

[0020] This invention is the record medium which receives desired voice data through a communication line, and accumulated voice data from the voice database with which two or more voice data was accumulated.

[0021] The network service center and digital carrying type stereo headphone player which offer much music data are connected using dial-up lines (for example, ISDN circuit etc.), music data are picked out from a network service center, and this music data is recorded on a hard disk, and is reproduced. Since digital recording of the voice data is carried out, improvement in tone quality can be aimed at. Since a card type hard disk is used, while access speed is quick, small and lightweight-ization can be attained. Moreover, since favorite music can be chosen from a network service center, while it is user-friendly, the number of music which can be used becomes huge and it can respond to diversification of music user liking,

and a musical fashion. Furthermore, by fixing a digital carrying type stereo headphone player to a base station, while communication facility is equipped, a dc-battery can be charged. A new function can be added by equipping a digital carrying type stereo headphone player with the card for expansion, and possibilities are good.

[0022]

[Embodiments of the Invention] Hereafter, one example of this invention is explained with reference to a drawing.

Fundamentally, as for an application **** digital carrying type beef fat phone stereo, this invention reproduces and uses the music data which tied much music data using the network service center and dial-up line to offer, picked out music data from the network service center, recorded this music data on the hard disk, and were recorded on this hard disk.

[0023] Drawing 1 shows an example of the home terminal structure of a system in the digital carrying type headphone stereo cassette tape recorder with which this invention was applied. In drawing 1, 1 is a digital carrying type head stereo. The interior is equipped with the hard disk so that the digital carrying type headphone stereo cassette tape recorder 1 may be explained in full detail behind, and the music data sent to this hard disk by communication are stored.

[0024] 2 is a base station. A crevice 3 is established in a base station 2. The digital carrying type head stereo 1 whole fits into this crevice 3, and the carried type headphone stereo cassette tape recorder 1 is fixed to a base station 2.

[0025] A base station 2 is fixed to the wall surface of for example, each home etc. A base station 2 is used for the current supply to communications control with the below-mentioned network service, and the dc-battery of the digital carrying type headphone stereo cassette tape recorder 1 etc. That is, the communications control terminal 4 is drawn from a base station 2. Communication lines, such as ISDN, are connected to this communications control terminal 4. Moreover, a power terminal 5 is drawn from a base station 2. A power supply is supplied from this power terminal 5. The data input/output terminal 7 for delivering and receiving the power terminal 6 for supplying a power supply to the dc-battery of the digital carrying type headphone stereo cassette tape recorder 1 and data with the digital carrying type headphone stereo cassette tape recorder 1 is formed in the crevice 3 of a base station 2.

[0026] When carrying the digital carrying type headphone stereo cassette tape recorder 1, this digital carrying type headphone stereo cassette tape recorder 1 is removed from a base station 2, and the digital carrying type headphone stereo cassette tape recorder 1 is carried independently.

[0027] When recording data on the digital carrying type headphone stereo cassette tape recorder 1, or in supplying a power supply to the dc-battery of the digital carrying type headphone stereo cassette tape recorder 1, the digital carrying type head stereo 1 fits into the crevice 3 of a base station 2.

[0028] If the digital carrying type head stereo 1 fits into the crevice 3 of a base station 2, the power terminal 8 and the data input/output terminal 9 of the digital carrying type head stereo 1 at the bottom will be connected with the power terminal 6 of the crevice 3 of a base station 2, and the data input/output terminal 7. Thereby, while the dc-battery of the carried type headphone stereo cassette tape recorder 1 is charged, the carried type headphone stereo cassette tape recorder 1 will be in the state which can communicate using an ISDN circuit.

[0029] A liquid crystal display 11, the direction key 12, and input keys 13A and 13B are formed in the front face of the digital carrying type headphone stereo cassette tape recorder 1. Moreover, the keys 14 of operation, such as a rapid traverse, reproduction, rewinding, a halt, and a halt, are formed in the front face of this digital carrying type beef fat phone stereo 1. The headphone terminal 15 and the microphone terminal 16 are formed in the upper surface of the digital carrying type beef fat phone 1.

[0030] As mentioned above, it is used for this carried type headphone stereo cassette tape recorder 1 for the music data which picked out music data from the network service center, recorded this music data on the hard disk, and were recorded on this hard disk, reproducing.

[0031] Drawing 2 shows the composition at the time of transmitting the voice data from a network service to a digital carrying type headphone stereo cassette tape recorder. In drawing 2, 21 is a network service center. The network service center 21 is a server which provides a user with the music source. As for this network service center 21, much music data are stored. The network service center 21 can be accessed from the outside using the dial-up line of for example, ISDN circuit 23 grade. A network service 21 charges the user of music data by the contract with a user. The method of accounting can consider how to make it into the method, the moon, or the annual fixed charge which determines the charge per music, the method of deciding the charge per time, etc.

[0032] Moreover, you may make not only offer of the voice data from the network service center 21 to a user side but a user upload the music made personally in the network service center 21. In this case, it is desirable that a certain charge is paid to the user who offered music information also from the position of protecting copyright. For example, the user who offered music information can consider receiving a charge according to the number of times which the music downloaded.

[0033] As mentioned above, when the digital carrying type head stereo 1 is fitted into the crevice 3 of a base station 2, the digital carrying type headphone stereo cassette tape recorder 1 has communication facility. The digital carrying type head stereo 1 is connected to the network service center 21 through the ISDN circuit 23 by this communication facility. If the digital carrying type headphone stereo cassette tape recorder 1 is connected to the network service center 21, as shown in drawing 3 A, the screen of the menu in which musical Oita is shown will be sent to the digital carrying type headphone stereo cassette tape recorder 1 from the network service center 21, and will be displayed on a display 11. A desired classification is specified out of this screen using the direction key 12 and input keys 13A and 13B.

[0034] After specification of a classification is completed, as shown in drawing 3 B, the menu of a music name appears. If desired music is chosen from this music name using the direction key 12 and input keys 13A and 13B, the data of the music

will be sent to the digital carrying type head stereo 1 through the ISDN circuit 23 from the network service center 21. And this music data is recorded on the hard disk of the digital carrying type head stereo 1.

[0035] As a protocol which transmits voice data from the network service center 21, as shown in drawing 4, a header is added to voice data and it is possible to transmit by packet data, for example. The transfer protocol of voice data may define an original protocol, and you may make it a general-purpose protocol like TCP/IP used for it.

[0036] . Voice data can consider compressing and transmitting again. Although proposed in various things as a compression method of voice data, since it is used as a carried type headphone stereo cassette tape recorder, to use the compression method which thought tone quality as important is desired. For example, ATRAC (Adaptive Transform Acoustic Coding) currently used by MD can be used. Moreover, it encodes so that the sent music data can be reproduced on real time, and you may make it transmit.

[0037] In addition, although carried out as [choose / desired music / by menu display] in the above-mentioned example, desired music can also be searched by the music name, the singer, etc. Moreover, an icon is displayed on a screen and you may enable it to choose desired music with an icon and a pointing device.

[0038] When carrying the digital carrying type headphone stereo cassette tape recorder 1, as shown in drawing 5, the digital carrying type headphone stereo cassette tape recorder 1 is removed from a base station 2. Headphone 17 are attached in the headphone terminal 15 of the digital carrying type headphone stereo cassette tape recorder 1. The music data currently recorded on the hard disk built in the digital carrying type headphone stereo cassette tape recorder 1 by operation of the keys 14 of operation, such as a rapid traverse, reproduction, rewinding, a halt, and a halt, are reproduced. This reproduction sound is outputted from headphone 17.

[0039] Thus, it is used for the music data transmitted from the network service center 21 for an internal hard disk by the digital carrying type headphone stereo cassette tape recorder 1 with which this invention was applied, memorizing. For this reason, from the network service center 21, the newest music can be taken out and a musical taste of the diversified user can be satisfied. Since music data are compressed while using ISDN for the music data transfer, it does not require for the transfer time for a long time. And a hard disk is used as a record medium. For this reason, access speed is very quick and cannot receive vibration easily compared with an optical disk.

[0040] In addition, although the above-mentioned example explained the system which consists of a digital carrying type head stereo 1 and a base station 2, it can also carry out external [of a keyboard or the display] to the digital carrying type headphone stereo cassette tape recorder 1. That is, as shown in drawing 6, the connector 18 is formed in the digital carrying type headphone stereo cassette tape recorder 1. A display 31, a keyboard 32, a modem, or a terminal adapter 33 can be attached in this connector 18.

[0041] If a modem or a terminal adapter 33 is attached, while being able to connect the network service center 21 and the digital carrying type headphone stereo cassette tape recorder 1 using a modem or a terminal adapter 33, without using a base station 2, it is connectable with other KONHYUTA. Furthermore, instead of a modem or a terminal adapter, a radio connection controller is used and connecting the network service center 21 and the digital carrying type headphone stereo cassette tape recorder 1 on radio is also considered.

[0042] By attaching a keyboard 32, a still more complicated command can be inputted and the carried type headphone stereo cassette tape recorder 1 can be used for various uses. Moreover, if a display 31 is attached, it also becomes possible to reproduce a video data etc. and the network service center 21 can be utilized as an audio-visual database. In addition, as a display 31, a liquid crystal display, a plasma display, etc. can be used other than a CRT display.

[0043] Drawing 7 is the block diagram showing the digital carrying type headphone stereo cassette tape recorder structure of a system to which this invention was applied. In drawing 7, the digital carrying type beef fat phone stereo 1 has CPU41 which performs whole control. While ROM43 and RAM44 are connected to a bus 42 from CPU41, compression/extension circuit 46 for performing compression/extension of the hard disk 45 for memorizing voice data and voice data is established in it. Moreover, it has I/O Port 49 for attaching the card 71 for adding I/O Port 48 for attaching I/O Port 47 for attaching DSU (Digital Service Unit)61 of a base station 2, the external keyboard 32 and the external modem 33, and the external display 31, and various functions in a bus 42, and is in it. Furthermore, the driver 55 for driving an input key 51 (it corresponding to the direction key 12, input keys 13A and 13B, and the key 14 of operation) and a liquid crystal display 11 is connected to a bus 42.

[0044] this bus 42 consists of standard buses for PC which were standardly used in the field of a personal computer and which are, and consists of an ISA (IndustryStandard Architecture) bus widely adopted as an external bus (called an expansion slot bus, a system bus, etc.) of AT compatible machine, a PCI (Peripheral Component Interconnect) bus which considers as a local bus (called a processor direct bus), and is adopted widely by having adopted the circuitry of the general-purpose architecture using the general-purpose bus in the field of such a personal computer, coexistence which it is with cheap-izing of the manufacturing cost as the digital carrying type headphone stereo 1 whole, and high versatility and high expandability is realized

[0045] The base station 2 has DSU61 and the power circuit 62. If the digital carrying type headphone stereo cassette tape recorder 1 is attached in a base station 2, DSU61 of a base station 2 will be connected to the bus 42 of the carried type headphone stereo cassette tape recorder 1 through I/O Port 47. With this, the power supply from a power circuit 62 is supplied to the dc-battery 53 of the carried type headphone stereo cassette tape recorder 1, and a dc-battery 53 is charged.

[0046] When storing the music data from the network service center 21 in a hard disk 45, the digital carrying type headphone stereo cassette tape recorder 1 is attached in a base station 2. And the command for connecting with the network service

center 21 is given by operation of an input key 51, and the digital carrying type headphone stereo cassette tape recorder 1 is connected to the network service center 21 by DSU61. From the network service center 21, for example, it is packet-ized by general-purpose protocols, such as an original protocol or TCP/IP, and data are sent. Decomposition processing of this packet data is made and required compression voice data is extracted. This compression voice data is transmitted to a hard disk 45, and is memorized by the hard disk 45.

[0047] When reproducing the data memorized by the hard disk 45, a reproduction command is given by operation of an input key 51. If a reproduction command is given, the compression voice data memorized by the hard disk 45 will be read, and this will be supplied to speech compression / extension circuit 46. The voice data which is speech compression / extension circuit 46, for example, was compressed by ATRAC is elongated. This elongated voice data is supplied to headphone 17 through D/A converter 52.

[0048] When recording the sound signal from microphone 54 grade, a recording command is given by operation of an input key 51. If a recording command is given, the sound signal from a microphone 54 will be supplied to A/D converter 56, and a sound signal will be digitized. This voice data is supplied to speech compression / extension circuit 46. Voice data is compressed in speech compression / extension circuit 46. This compression voice data is transmitted to the hard disk 45 through a bus 42, and is memorized by the hard disk 45.

[0049] In order to attain small lightweight-ization, the main substrate which unified main parts, and the card type hard disk are used for the digital carrying type headphone stereo cassette tape recorder 1. Drawing 8 is the decomposition perspective diagram showing the internal configuration of the digital carrying type headphone stereo cassette tape recorder 1. In case 70A of the digital carrying type headphone stereo cassette tape recorder 1, and 70B, the main substrate 71, the card type hard disk 72, and the dc-battery 73 are stored. Furthermore, it can equip with the expansion card 74.

[0050] All of CPU41, ROM43, RAM44 grade, and main passive circuit elements are arranged at the main substrate 71. For example, the small main substrate 71 of the same grade as a PCMCIA card which used about 80386 CPU is already developed. It is thought that the small main substrate 71 in which CPU in which high-speed operation is future more possible was carried is developed.

[0051] A hard disk 72 is what used the 1.8 inches disk, it is a configuration of the same grade as a PCMCIA card, and the thickness is 5mm. In this digital carrying type headphone stereo cassette tape recorder 1, in this way, in order to attain the miniaturization of a device, the card type hard disk 72 is used. 121MB of thing can receive such a card type hard disk 72 easily now. Furthermore, it is thought that about 1GB of thing will be developed in the near future.

[0052] If a sampling frequency is made to 30kHz and the quantization number of bits is made into 16 bits, the music reproduction for about 33 minutes can be enjoyed using 120MB of hard disk. Furthermore, if speech compression of double precision is performed, the music reproduction for about 30 minutes will be able to be enjoyed using 50MB of hard disk. If the music reproduction for about 30 minutes can be enjoyed, since it will be thought that it is enough for anticipated use, if speech compression of double precision is performed and 50MB or more of hard disk is used, it will be thought for the time being that it is enough. If a card [about 1GB of] type hard disk will be developed in the near future, prolonged reproduction will be attained more qualitatively of loud sound.

[0053] In addition, although the card type hard disk is used, you may make it use phase-change type an optical disk and a magneto-optic disk in an above-mentioned example. When card type an optical disk and a magneto-optic disk are developed, this can be used like a card type hard disk.

[0054] The expansion card 74 is for adding the further function to the digital carrying type headphone stereo cassette tape recorder 1. The expansion card 74 is a configuration of the same grade as a PCMCIA card. as an expansion card 74 For example, image record / reproduction card which performs compression/extension of animations, such as MPEG, as shown in drawing 9 (drawing 9 A), The facsimile transceiver card which enables transmission and reception of facsimile (drawing 9 B), The radio transceiver card which enables it to transmit and receive data on radio (drawing 9 C), The cable transceiver card (drawing 9 F) for transmitting and receiving the pager card which adds pager ability (drawing 9 D), for example, the navigation card which enables it to perform navigation using GPS, (drawing 9 E), and the data in a cable etc. is considered. By attaching the expansion card 74, other functions can be added to the digital carrying type headphone stereo cassette tape recorder 1, and the digital carrying type headphone stereo cassette tape recorder 1 can be used for other various uses.

[0055]

[Effect of the Invention] According to this invention, the network service center and digital carrying type stereo headphone player which offer much music data are connected using an ISDN circuit etc., music data are picked out from a network service center, and this music data is recorded on a hard disk, and is reproduced. Since digital recording of the voice data is carried out, improvement in tone quality can be aimed at. Since a card type hard disk is used, while access speed is quick, small and lightweight-ization can be attained. Moreover, since favorite music can be chosen from a network service center, while it is user-friendly, the number of music which can be used becomes huge and it can respond to diversification of music user liking, and a musical fashion. Furthermore, by fixing a digital carrying type stereo headphone player to a base station, while communication facility is equipped, a dc-battery can be charged. A new function can be added by equipping a digital carrying type stereo headphone player with the card for expansion, and possibilities are good.

[0056] that is, the standard buses for PC (for example, an ISA Bus, a PCI bus, etc.) standardly adopted in the field of a personal computer as a bus which connects each part are used, and cheap-izing which is a manufacturing cost as the whole digital carrying type headphone stereo play, and high versatility and high expandability are realized by having adopted the circuitry of such general-purpose ** architecture

[Translation done.]

*** NOTICES ***

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] The control section which controls the whole operation, and the storage section which performs writing/read-out of data, The voice extension section which elongates the compressed voice data, and the external I/O section which exchanges the data from the outside, It has the standard bus for personal computers to which data are transmitted between the above-mentioned control section, the above-mentioned storage section, the above-mentioned voice extension section, and the above-mentioned external I/O section. The voice regenerative apparatus which transmits the compression voice data which memorized compression voice data in the above-mentioned storage section, and was memorized by the above-mentioned storage section to the above-mentioned voice extension section, elongates the above-mentioned compression voice data in the above-mentioned voice extension section, and reproduced voice.

[Claim 2] The above-mentioned storage section is a voice regenerative apparatus according to claim 1 which consists of a card-like record medium.

[Claim 3] The above-mentioned storage section is a voice regenerative apparatus according to claim 1 which consists of a card-like hard disk.

[Claim 4] The control section which controls the whole operation, and the storage section which performs writing/read-out of data, The voice extension section which elongates the compressed voice data, and the external I/O section which exchanges the data from the outside, It has the standard bus for personal computers to which data are transmitted between the above-mentioned control section, the above-mentioned storage section, the above-mentioned voice extension section, and the above-mentioned external I/O section. Voice recording equipment which incorporates the data sent by the predetermined format through the above-mentioned external I/O section, takes out compression voice data from the incorporated data, and memorized the above-mentioned compression voice data in the above-mentioned storage section.

[Claim 5] The above-mentioned storage section is voice recording equipment according to claim 4 which consists of a card-like record medium.

[Claim 6] The above-mentioned storage section is voice recording equipment according to claim 4 which consists of a card-like hard disk.

[Claim 7] The voice reproduction method which consists of the step which memorizes compression voice data in the storage section, a step which reads the compression voice data memorized by the above-mentioned storage section, and is transmitted to the voice extension section, and a step which reproduces voice data in the above-mentioned voice extension section.

[Claim 8] The voice recording method which consists of the step which incorporates the data sent by the predetermined format through the external I/O section, a step which takes out compression voice data from the data incorporated through the above-mentioned external I/O section, and a step which memorizes the above-mentioned compression voice data in the storage section.

[Claim 9] The voice recording regeneration system characterized by providing the following. The control section which controls the whole operation. The storage section which performs writing/read-out of data. The voice extension section which elongates the compressed voice data. The 1st functional right hand side with which it is equipped free [attachment and detachment] to the voice recorded message sender for telephone with which the external I/O section which exchanges the data from the outside was united, and the above-mentioned voice recorded message sender for telephone and which gives an auxiliary function to the above-mentioned voice recorded message sender for telephone, and the 2nd functional right hand side with which the above-mentioned voice recorded message sender for telephone is equipped free [attachment and detachment inside] and which adds a new function to the above-mentioned voice recorded message sender for telephone.

[Claim 10] The functional right hand side of the above 1st is a voice recording regeneration system according to claim 9 made into the structure where it is equipped with the above-mentioned whole voice recorded message sender for telephone into it.

[Claim 11] The functional right hand side of the above 1st is a voice recording regeneration system according to claim 9 which has communication facility and/or a current supply function.

[Claim 12] The functional right hand side of the above 2nd is a voice recording regeneration system according to claim 9 with which is made into the shape of a card and it is equipped in the above-mentioned voice recorded message sender for telephone.

[Claim 13] The functional right hand side of the above 2nd is a voice recording regeneration system according to claim 9 which is image compression, facsimile transmission and reception, radio transmission and reception, a pager, navigation, or the thing that gives the function of cable transmission and reception.

[Claim 14] It is the transfer method of voice data which was made to charge to the above-mentioned receiving side while the above-mentioned voice database sent data to the above-mentioned receiving side by the predetermined move format in the transfer method of voice data which receives desired voice data through a communication line, accumulates the above-mentioned voice data by the receiving side from the voice database with which two or more voice data was accumulated, and is reproduced.

[Claim 15] The transfer method of the voice data according to claim 14 which disassembles the data of the above-mentioned predetermined move format, and took out voice data in the above-mentioned receiving side.

[Claim 16] The above-mentioned voice database and the above-mentioned receiving side are the transfer method of the voice data according to claim 14 transmitted with the dial-up line.

[Claim 17] The information receiving set which consists of a means to choose desired voice data from the voice database with which two or more voice data was accumulated, a means to receive desired voice data through a communication line, and to accumulate the above-mentioned voice data, and a means to reproduce the voice data by which accumulation was carried out above-mentioned].

[Claim 18] The record medium which receives desired voice data through a communication line, and accumulated the above-mentioned voice data from the voice database with which two or more voice data was accumulated.

[Claim 19] The above-mentioned voice data is a record medium according to claim 18 recorded on a magnetic-recording medium.

[Claim 20] The above-mentioned voice data is a record medium according to claim 18 recorded on an optical recording medium.

[Claim 21] The above-mentioned standard bus for personal computers is a voice regenerative apparatus according to claim 1 which it is in any of local buses, such as external buses, such as an ISA Bus used by AT compatible machine, or a PCI bus.

[Claim 22] The above-mentioned standard bus for personal computers is voice recording equipment according to claim 4 which it is in any of local buses, such as external buses, such as an ISA Bus used by AT compatible machine, or a PCI bus.

[Translation done.]